29712

Name : .....

Reg. No: .....

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, OCTOBER 2012

EC 09 / PT EC 09 702 – MICROWAVE ENGINEERING
(2009 Admission)

Time : Three Hours **Maximum : 70 Marks**

PART – A

I

1. What is microwave?
2. State any two limitations of using conventional tubes for microwave generation.
3. State Gunn effect.
4. What is an avalanche effect?
5. Draw the electric and magnetic field distribution in microstrip lines.

(5 x 2 = 10 Marks)

PART – B

II (a) Give the scattering Matrix representation of a 3 port network.

(b) What is a Magic tee? Explain its operation.

(c) Klith neat sketch, explain the operation reflex Klystron oscillator.

(d) Explain parametric amplifiers.

(e) Explain the features and advantages of microwave Integrated circuits. (MIC's)

(f) What is a frequency multiplier? Explain.

(4 x 5 = 20 Marks)

PART – C

III (a) Discuss the characteristics features and applications of microwaves.

(Or)

(b) Explain in detail about:
(i) Directional couples
(ii) Isolator

IV (a) Explain the operation of a Magnatron.

(Or)

(b) Explain the operation and application of a TWT.

V (a) Derive the Manley ROWe Relation.

(Or)

(b) (i) Explain PIN Diode and its applications.
(ii) Explain the operation of a Schottky barrier diode.

VI (a) (i) Compare Monolithic MIC and Hybrid MIC.
(ii) Explain VSWR measurement.

(Or)

(b) Discuss in detail about
(i) Power Measurement
(ii) Impedance Measurement.

(4 x 10 = 40 Marks)

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